

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 70.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-009939**Date Inspected:** 27-Oct-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1630**Contractor:** Japan Steel Works**Location:** Muroran, Japan**CWI Name:** T. Imai**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower, Jacking, and Deviation Saddles**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector Mr. Art Peterson was present during the times noted above for observations relative to the work being performed in Fabrication Shop #4 and the Foundry Shop at Japan Steel Works.

Fabrication Shop #4:

Storage of Saddles: West Deviation Saddle Segments - W2-E1, W2-E2, and W2-E3

The QA Inspector observed that west deviation saddle segments W2-E1, W2-E2, and W2-E3 are being stored in Fabrication Shop #4 until the paint quality work plan (PQWP) is approved. Afterwards the west deviation saddle segments will be moved into the paint shop to start the metalizing operation on the interior of the troughs.

Final NDT Operation in-process on Saddle: West Deviation Saddle Segment W2-W1

The QA Inspector observed Nikko Inspection Services (NIS) Quality Control (QC) Non-Destructive Testing (NDT) Inspector Mr. N. Osawa (#340) performing the magnetic particle test (MPT) inspection by the (wet method) on west deviation saddle segment W2-W1 on the final machined surfaces of the level (1) and level (3) areas as shown on the plans of the machined surfaces on interior of the trough and of the machined surfaces on the exterior side of the end rib sections. The NIS QC NDT Inspector Mr. N. Osawa verified the lifting force and the sensitivity of the yoke as per ASTM E709 prior to the start of the MPT inspection. The QA Inspector also verified that the bath concentration of the non-fluorescent particles were between (1.2 and 2.4) mL per (100) mL as per ASTM E709 Section 20.6.3 and the manufacturer's recommendations. The actual settling volume was recorded at (2.0) mL as measured using a centrifuge tube with a (1.5) mL stem after allowing the particles to settle for approximately (30) minutes prior to taking the settling volume measurement. The QA Inspector observed that the

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MPT inspection performed by Mr. N. Osawa was in-process at the end of the QA Inspectors' shift.

Foundry Shop:

Layout Operation in-process for MPT Inspection on Saddle: West Jacking Saddle (before final machining)

The QA Inspector observed that Nikko Inspection Services (NIS) Non-Destructive Testing (NDT) Quality Control (QC) Inspector Mr. H. Kohama (#86) was in preparation to perform the magnetic particle test (MPT) inspection before the final machining operation on the interior of the trough and exterior of the trough in between the rib sections of the west jacking saddle at the locations where the major and minor weld repairs were previously performed. Mr. H. Kohama was performing the layout operation- marking (300 x 300) mm grid lines on the weld repair locations for record purposes, identification, and guidance in inspection. The QA Inspector observed that the layout operation was in-process on the west jacking saddle at the end of the QA Inspectors' shift.

Paint Shop:

Initial Operator Qualification Test: Thermal Spray Coating Metalizing Process

The QA Inspector witnessed the initial thermal spray coating (TSC) operator qualification test for certification performed by JSW's sub-contractor Mikami Tokobu. The thermal spray operators performing the qualification tests were Mr. Toshihiko Noda (#M-1), Mr. Kazuyuki Takeda (#M-2), and Mr. Kikuo Suzuki (#M-3). The tests were performed in accordance with Annex C of ANSI/AWS C2.18-93. The QA Inspector verified that the environmental conditions- (dew point, air temperature, relative humidity and substrate surface temperature) in the paint shop were in accordance with the contract special provisions and ANSI/AWS C2.18-93. A total of (5) corrosion control carbon steel bend coupons were coated for the bend test by each TSC operator and (5) tensile-bond carbon steel specimens were coated by each TSC operator. Prior to the TSC application, the substrate coupon and specimen surfaces were blast cleaned at an air pressure of (.7) MPA and the blast media used was aluminum oxide- size (#24). The blast profiles were measured by the Mikami Tokobu Quality Control Inspector and the surface finish measured was between (50) micrometers and (100) micrometers. Afterwards, the QA Inspector verified that the TSC process being utilized was by the 2-wire arc and the TSC material composition was (85/15) Zn/AL (2.0) mm diameter wire. The coating thickness inspection performed by the Mikami Tokobu Quality Control Inspector for each operator on the carbon steel bend coupons measured were between (200 and 250) micrometers and the TSC was sprayed in crossing passes with a standoff distance between the gun and the coupon measured between (150 and 200) mm with the gun maintained approximately perpendicular to the substrate coupons. The coating thickness inspection performed by the Mikami Tokobu Quality Control Inspector for each operator on the tensile-bond carbon steel specimens were measured between (375 and 500) micrometers sprayed in crossing passes with a standoff distance between the gun and the specimen measured between (150 and 200) mm with the gun maintained approximately perpendicular to the substrate specimens. Afterwards, the tensile-bond specimen substrates were attached to the loading fixture using Armstrong A-12 adhesive bond agent and will be cured at an elevated temperature to be determined by JSW and following the manufacturer's recommendations. The initial operator qualification tests appeared to be in general compliance with the contract special provisions and ANSI/AWS C2.18-93 and the QA Inspector assigned Caltrans witness lot number B275-016-09 for the (3) TSC operators initially tested. The JSW Representative Mr. Hideaki Kon informed the QA Inspector that the bend and tensile-bond tests on the coupons and specimens will be performed during the week of November 2nd, 2009.

Unless otherwise noted in this report, all observations reported on this date appeared to be in general compliance with the applicable contract specifications.

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Summary of Conversations:

No significant conversations were reported on this date.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy at (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Peterson, Art	Quality Assurance Inspector
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Reviewed By:	Edmondson, Fred	QA Reviewer
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